Dr. John S. Spraker

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EDUCATION

1987   Ph.D., Indiana University
Dissertation: <u>The Minimal Normal Extension for Mz on the Hardy Space of a Planar Region</u>
Dissertation advisor: John Conway
1984   M.A.   Indiana University
1982   B.S.   Middle Tennessee State University

EMPLOYMENT

1982-1987   Associate Instructor at I. U.

1987-Present   Western Kentucky University Department of Mathema**tics**

Full Professor since 1997.

PUBLICATIONS

1. "The Minimal Normal Extension for Mz on the Hardy Space of a Planar Region" by John S. Spraker, <u>Transactions of the American Mathematical Society</u>, Vol. 318, No. 1 pp. 57-67 (1990)

2. "Note on Arc-Length and Harmonic Measure" by John S. Spraker, <u>Proceedings of the American Mathematical Society</u>, Vol. 105, No. 3, pp. 664-665 (1989)

3. "Multiplicity Theory and the Outer Boundary" by John S. Spraker, <u>Proceedings of the American Mathematical Society</u>, Vol. 112, No. 2 pp. 391-392 (1991)

4. "A Study of Almost-Everywhere Singleton-Valued Filippov's" by Daniel C. Biles and John S. Spraker, <u>Proceedings of the American Mathematical Society</u>, Vol. 114, No.2 pp.469-473 (1992)

5. "Filippov's Operation and Some Attributes", by John S. Spraker and Daniel C. Biles, <u>Czechoslovak Mathematical Journal</u>, Vol. 44, No.119 pp. 513-520 (1994)

6. "A Comparison of the Caratheodory and Filippov Solution Sets" by John S. Spraker and Daniel C. Biles, <u>Journal of Mathematical Analysis and Applications</u> Vol. 198 pp. 571-580 (1996)

7. "Planning a Trip" by John S. Spraker, Daniel C. Biles and Mark P., Robinson, <u>Transactions of the Kentucky Academy of Science</u>, Vol. 58, No. 2 pp. 92-95 (1997)

8. " Term-by-Term Multiplication of Sequences and Radii of Convergence", by Mark P. Robinson and John S. Spraker, <u>International Journal of Mathematical Education in Science and Technology</u>, Vol. 29, No.1 pp. 128-132 (1998)

9. "Numerical Solutions for a Class of Non-Convex-Valued Differential Inclusions" by Daniel C. Biles, Mark P. Robinson, and John S. Spraker, <u>Dynamic Systems and Applications</u>, Vol. 8, No. 2 pp, 265-270 (1999)

10. "Continuous Almost Anywhere" by Daniel C. Biles and John S. Spraker, <u>International Journal of Mathematical Education in Science and Technology</u>, Vol. 30, No.2 pp. 287-289 (1999)

11. "A Generalization of the Lane Emden Equation" by Daniel C. Biles, Mark P. Robinson, and John S. Spraker, <u>Journal of Mathematical Analysis and Applications</u> Vol. 273 pp. 654-666 (2002)

12. "Analytic Solutions for a Class of Nonlinear Ordinary Differential Equations", by Daniel C. Biles, Mark P. Robinson, and John S. Spraker, <u>Complex Variables</u>, Vol. 48, No. 2 pp 143-154 (2003)

13. "Fixed Point Approaches to the Solution of Integral Inclusions", D. Biles, M. Robinson, and J. Spraker, <u>Topological Methods in Nonlinear Analysis,</u> Vol. 25 , pp. 297 – 311 (2005)

14. "Nystrom Methods and Singular Second Order Differential Equations", D. Benko, D. Biles, M.Robinson, and J. Spraker, <u>Computers and Mathematics with Applications,</u> Vol 56, Issue 9, pp. 1075 – 1980 (2008)

15. "Numerical Approximation for Singular Second Order Differential Equations", D. Biles, M. Robinson, and J. Spraker, <u>Mathematical and Computer Modelling,</u> Issue 49, pp. 1109 – 1114, (2009)

16. "Existence of Solutions for Singular Functional Differential Equations with Upper and Lower Solutions", D. Biles and J. Spraker, Submitted to <u>Nonlinear Analysis, Theory, Methods and Applications</u>

SAMPLING OF PROFESSIONAL PRESENTATIONS

1. "The Minimal Normal Extension for Mz on the Hardy Space of a Planar Region" Spring 1988 meeting of the American Mathematical Society (AMS) in Atlanta.
2. "Multiplicity and Uniformization Maps" 1990 joint meeting of the AMS and Mathematical Association of America (MAA) in Louisville Ky.
3. "How Simple is Simply Connected?" Poster presentation at the summer 1988 meeting of the International Congress on Mathematical Education in Budapest Hungary.
4. "How Long is Long" 1987 Kentucky Academy of Science (KAS) meeting.
5. "Harmonic Measure and Arc-Length" 1988 KAS meeting.
6. "What's a Subnormal Operator?" 1988 meeting of the Kentucky Section of the Mathematics Association of America (KYMAA).
7. "Puzzles Anyone?" Given each year to high school students at Hilltopper Science Days at WKU.
8. " A Prime End is not a Cut of Beef" 1989 meeting of the KYMAA.
9. "Multiplicity and the Outer Boundary" 1989 meeting of the KAS.
10. "These are a few of my favorite sets." 1990 KYMAA meeting.
11. "Approximate Combs and Filippov Solutions" 1990 KAS Meeting.
12. "It Aint Necessarily So." 1991 KYMAA meeting.
13. "The Dirichlet Problem, Harmonic Measure and Hardy Spaces: a Quick Overview." 1991 KAS meeting.
14. "Remember the Cantor Set! (Even if you have forgotten the Alamo)" 1994 KYMAA meeting.
15. "Is there a T in Boundary?" 1995 KYMAA meeting.
16. "Sequences and Series but What About Products?" 1995 KAS meeting.
17. "Continuous Almost Everywhere... Well Almost" 1997 KYMAA meeting.
18. "The Sea Island Mathematical Manual" 1997 KAS meeting.
19. "Continued Fractions and the Euclidean Algorithm." 1998 KAS meeting.
20. "By All Means!" 2000 KAS meeting.
21. "Mathematics and the Maya" 2001 joint meeting of the KAS and Tennessee Academy of Science.
22. "Time to touch Base" 1999 KAS meeting and again at the 2000 WKU Mathematics Symposium.
23. Numerous invited high school presentations
24. "A Brief Survey of Early Surveying", 2002 KAS meeting
25. "Queen Dido's Mad Cow", 2003 KAS meeting
26. "Polynesian Migration Strategies", 2005 KAS meeting
27. "It May be Simple Interest but it's Greek to Me.", 2006 KAS meeting
28. "A Talk of Acceptable Duration", 2008 KYMAA meeting
29. "A Few Cantor Sets", 2009 KAS meeting

COURSES TAUGHT

Math 100 - Intermediate Algebra
Math 116 - College Algebra
Math 118 - College Algebra and Trigonometry
Math 211 - 212 Mathematics for Elementary Teachers I and II
Math 203 - Statistics
Math 126 - Calculus and Analytic Geometry I
Math 126H - Honors section of the above course.
Math 227 - Calculus and Analytic Geometry II
Math 327 - Multivariable Calculus
Math 323 - College Geometry
Math 310 - Discrete Mathematics
Math 307 - Linear Algebra
Math 331 - Differential Equations
Math 329 - Probability and Statistics
Math 431-432 431G, 432G - Real Analysis I and II
Math 450, 450G - Complex Variables
Math 405-406 405G, 406G - Numerical Analysis I and II
Math 398 - Independent study
Math 498 – Senior Seminar
Math 475 - Topics in Mathematics
Math 532 Real Analysis

MISCELLANEOUS SERVICE
1. University Academic Probation Committee
2. Academic Council member 1999-2000
3. University General Education Committee member. 2000-2001
4. Academic Advisor
5. Chairman of the Math Department Instructor Hiring Committee 1999-Present
6. Pi Mu Epsilon Mathematics Honor Society faculty advisor
7. University Faculty Grievance Committee member
8. Ogden College Complaint Committee member
9. Quizmaster for Junior High Math Bowl
10. Served on four Master's Thesis Committees
11. Assisted several students in preparation for Actuarial exams
12. Ogden College Curriculum Committee
13. Kentucky Junior Academy of Science Physics and Engineering presentation judge. 1994
14. University Research Committee
15. Refereed or reviewed numerous papers
16. Liaison between the WKU mathematics department and the community colleges in Kentucky.
17. Numerous departmental committees: Examples include, hiring and teacher education.
17. Department Ph. D. hiring chairman
18. Tenure and promotion committee for the department of Engineering
19. Invited to McGraw – Hill Symposium in Napa. Feb. 5, 2005